Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Previously Presented) The communication network designing circuit as set forth in claim 3, wherein said path for said multiple point communication service is derived on the basis of a preliminarily set optimization standard.

3. (Previously Presented) A communication network designing circuit for multiple point communication service for permitting arbitrary communication within a predetermined range by providing traffic flowing in from an ingress node through which data flows in from another network and traffic flowing out from an egress node through which data is fed to the other network, comprising:

    setting means for setting a mathematical programming problem for deriving said multiple point communication service to permit arbitrary communication within the predetermined range, the setting means comprising:

        optimization reference generating means for setting an objective function for minimizing a link load in an object network coupled to the other network and serving as an optimization reference and setting a constraint expression for deriving said link load,

        per-user necessary link capacity calculating condition generating means for

generating a constraint expression for calculating a necessary link bandwidth for each

link carrying traffic flowing in from each ingress node, and

link including condition generating means for generating a constraint expression

so as not to exceed a link capacity limit in each link; and

optimizing means for solving the mathematical programming problem set by said setting

means and obtaining a path for said multiple point communication service.

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4. (Previously Presented) The communication network designing circuit as set forth in claim 3,

wherein the optimization reference generating means, the per-user necessary link capacity

calculating condition generating means, and the link including condition generating means

operate in parallel with respect to each other.

5. (Canceled)

6. (Previously Presented) The communication network designing method as set forth in claim 7,

wherein said path for said multiple point communication service is derived on the basis of a

preliminarily set optimization standard.

7. (Previously Presented) A communication network designing method for multiple point

communication service for permitting arbitrary communication within a predetermined range by

providing traffic flowing in from an ingress node through which data flows in from another

network and traffic flowing out from an egress node through which data is fed to the other

network, comprising:

    setting a mathematical programming problem for deriving said multiple point communication service to provide arbitrary communication within the predetermined range, the setting comprising:

        setting an objective function for minimizing a link load in an object network operatively coupled to the other network and where the objective function serves as an optimization reference,

        setting a constraint expression for deriving said link load,

        generating a constraint expression for calculating a necessary link bandwidth of each link carrying traffic flowing in from each ingress node, and

        generating a constraint expression so as not to exceed a link capacity limit in each link;

    solving the mathematical programming problem set by said setting; and

    obtaining a path for said multiple point communication service.

8. (Previously Presented) The communication network designing method as set forth in claim 7, wherein the setting an objective function, the setting a constraint expression, the generating a constraint expression for calculating, and the generating a constraint expression so as not to exceed a link capacity limit in each link operate in parallel with respect to each other.

9. (Canceled)

10. (Previously Presented) The storage medium as set forth in claim 11, further comprising:

deriving said path for said multiple point communication service on the basis of a

preliminarily set optimization standard.

11. (Previously Presented) A storage medium storing a communication network design control

program for designing a communication network for multiple point communication service for

permitting arbitrary communication within a predetermined range by providing traffic flowing in

from an ingress node through which data flows in from another network and traffic flowing out

from an egress node through which data is fed to the other network, said communication network

design control program comprising:

setting a mathematical programming problem for deriving said multiple point

communication service to provide arbitrary communication within the predetermined range, the

setting comprising:

setting a constraint expression for deriving a link load,

generating a constraint expression for selecting a route for traffic flowing in from

the other network,

generating a constraint expression for calculating a necessary link bandwidth of

each link carrying traffic flowing in from each ingress node, and

generating a constraint expression so as not to exceed a link capacity limit in each

link;

solving the mathematical programming problem set in said setting step; and

obtaining a path for said multiple point communication service.

12. (Previously Presented) The storage medium as set forth in claim 11, wherein the setting a constraint expression, the generating a constraint expression for selecting a route, the generating a constraint expression for calculating a necessary link bandwidth, and the generating a constraint expression operate in parallel with respect to each other.

13. (Canceled)

14. (Previously Presented) The transmission medium as set forth in claim 15, wherein said communication network design control program operates said computer for obtaining said path for said multiple point communication service on the basis of a preliminarily set optimization standard.

15. (Previously Presented) A transmission medium transmitting a communication network design control program for designing a communication network for multiple point communication service for permitting arbitrary communication within a predetermined range by providing traffic flowing in from an ingress node through which data flows in from an other network and traffic flows out from an egress node through which data is fed to the other network said communication network design control program comprising:

setting a mathematical programming problem for deriving said multiple point communication service to provide arbitrary communication within the predetermined range, the setting comprising:

setting a constraint expression for deriving said link load,

generating a constraint expression for calculating a necessary link bandwidth of

each link carrying traffic flowing in from each ingress node, and

generating a constraint expression so as not to exceed a link capacity limit in each

link;

solving the mathematical programming problem set in said setting; and

obtaining a path for said multiple point communication service.

16. (Previously presented) The transmission medium as set forth in claim 15, wherein the setting

a constraint expression, the operating said computer for generating a constraint expression for

calculating a necessary link bandwidth, and the operating said computer for generating a

constraint expression so as not to exceed a link capacity limit in each link operate in parallel with

respect to each other.

17. (Currently Amended) A method ~~for determining traffic capacities for nodes in a~~

~~network, the method~~ comprising:

specifying, when designing a network, ~~range having~~ a boundary forming an area

that includes a plurality of nodes making up the network;

identifying a first one of the plurality of nodes that is proximate to the boundary

as an ingress node to make incoming traffic available to other nodes in the network;

identifying a second one of the plurality of nodes that is proximate to the

boundary as an egress node to make outgoing traffic from the network available to

another network;

identifying an incoming traffic rate for the ingress node;

identifying an outgoing traffic rate for the egress node;

determining paths from the ingress node to the egress node that carry the

incoming traffic via at least a subset of the plurality of nodes;

calculating link capacities for the determined paths; and

determining traffic capacities for the at least the subset of the plurality of nodes

using the calculated link capacities.

18. (Previously Presented) The method of claim 17, further comprising:

identifying a third one of the plurality of nodes proximate to the boundary as a second

ingress node to make second incoming traffic available to other nodes in the network;

identifying a second incoming traffic rate for the second ingress node;

determining paths from the second ingress node to the egress node that carry the second

incoming traffic via certain of the at least the subset of the plurality of nodes;

calculating link capacities for the determined paths from the second ingress node; and

determining traffic capacities for the certain of the at least the subset of the plurality of

nodes using the calculated link capacities.